REMARKS

This is in response to the Office Action mailed on <u>December 8, 2004</u>, and the references cited therewith.

Claims 27 and 62 are amended. Claims 1- 62 are now pending in this application.

§112 Rejection of the Claims

Claim 62 was rejected under 35 USC § 112, second paragraph, as no database being set forth in claim 45 therefore lack antecedent basis for this term. Claim 62 was amended to provide support for the database.

§102 Rejection of the Claims

Claims 1-17 and 18-62 were rejected under 35 USC § 102(b) as being anticipated by Tong et al. (U.S. Patent No. 5,359,699). The rejection is respectfully traversed, as each and every element of the claimed invention is not shown in the reference.

Tong et al. describes the generation of pseudo data "outside of a boundary determined by a set of sample data." Abstract. This is further clarified at Col. 5, starting at line 54: "Next, at 120, pseudo data is generated to represent points different from the inside data. It would be ideal to place the pseudo outside points just outside of the desired boundary....One reasonable choice for the initial pseudo data is to randomly generate them within a bounding hypercube defined so its hypervolume is twice that of the hypercube bounding the inside data." This makes it clear that the data generated is outside the inside data. It is further clarified in the Summary of the Invention at Col. 4, lines 9-17: "The method relies on the **generation of pseudo data which is meant to replace the lack of data for the "outside" class**. The neural network is trained using the available data belonging to the"inside" class, and pseudo data which is generated in the specific ways disclosed herein. The training is performed iteratively until the neural net performs acceptable classification on both the inside and pseudo data." Emphasis added. This further clarifies that the pseudo data is only generated for the outside class.

Each of the independent claims describes "enriching the received data around a deviation of the mean of the received data using a predetermined distribution". Mathematically, this results in enriched data that includes additional data both on the "inside" and "outside" as those

terms are used in Tong et al. Thus, Tong et al. clearly lacks this element, and a proper prima facie case of anticipation has not been established. Further the claims indicate that the enriched data provides for unbiased learning. This is also believed to distinguish from Tong et al., because the additional data developed in Tong et al. is only outside, which may bias the results.

Claims 18-25, 31-34 were rejected under 35 USC § 102(b) as being anticipated by Tong et al. This rejection is respectfully traversed, at least for the reasons set forth with respect to claim 1. Applicant also traverses the assertion that a computer readable medium is inherent in Tong et al. As recited in MPEP § 2112, "In relying upon the theory of inherency, the examiner must provide basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic <u>necessarily</u> flows from the teachings of the applied prior art," citing <u>Ex parte Levy</u>, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). To serve as an anticipation when a reference is silent about the asserted inherent characteristic, the gap in the reference may be filled with recourse to extrinsic evidence. But, such evidence must make clear that "the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *Continental Can Co. v. Monsanto Co.,* 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). Applicant respectfully submits that the Examiner has not produced extrinsic evidence to show that a computer readable medium is necessarily present. The algorithms in Tong et al. may be hardwired, or done by hand. Thus, a computer readable medium is not necessarily present, and the rejection should be withdrawn.

Claims 35-44 were rejected under 35 USC § 102(b) as being anticipated by Tong et al. This rejection is respectfully traversed, at least for the reasons set forth with respect to claim 1. Applicant also traverses the assertion of inherency as above.

Claims 45-62 were rejected under 35 USC § 102(b) as being anticipated by Tong et al. This rejection is respectfully traversed, at least for the reasons set forth with respect to claim 1. Applicant also traverses the assertion of inherency as above.

§*103 Rejection of the Claims*

Claim 62 were rejected under 35 USC § 103(a) as being unpatentable over Tong et al. in view of Thyagarajan et al. This rejection is respectfully traversed. Applicant does not see

where the reference is clearly identified in the Office Action, and no copy appears to have been provided. Thus, it is not possible for Applicant to respond to this rejection. Further, claim 62 depends from a claim which is believed allowable, and Thyagarajan et al. is not cited as providing the missing elements.

Claim Objections

Claims 27, 28, 29, 30 were objected to under 37 CFR 1.75 as being a substantial duplicate of claims 10-13, respectively. Claim 27 was amended to depend from claim 26, which is believed to overcome the objection.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 09/899,424
Filing Date: July 3, 2001
Title: DISTRIBUTION THEORY BASED ENRICHMENT OF SPARSE DATA FOR MACHINE LEARNING

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Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and

notification to that effect is earnestly requested. The Examiner is invited to telephone

Applicant's attorney at (612) 373-6972 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account

No. 19-0743.

Respectfully submitted,

RAVINDRA K. SHETTY

By his Representatives,

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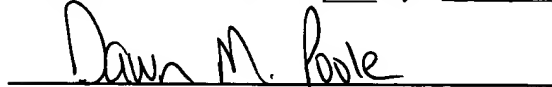P.O. Box 2938
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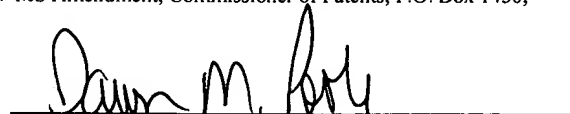(612) 373-6972

Date 2·24·2005   By _____

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